AMENDMENTS TO THE CLAIMS

1. (original): A method for typing a target gene, which method comprises:

a) isolating a target cell comprising a target gene from a suitable sample and obtaining a preparation comprising a target nucleotide sequence that is at least a part of said target gene from said isolated target cell and, optionally another nucleotide sequence not related to said target gene;

b) providing a chip comprising a support suitable for use in nucleic acid hybridization having immobilized thereon an oligonucleotide probe complementary to said target nucleotide sequence and at least one of the following oligonucleotide control probes: a positive control probe, a negative control probe, a hybridization control probe and an immobilization control probe; and

c) hybridizing said preparation obtained in step a) to said chip provided in step b) and assessing hybridization between said target nucleotide sequence and/or said another nucleotide sequence and said probes comprised on said chip to determine the type of said target gene.

2. (currently amended): The method of claim 1, wherein the target cell is a leukocyte[[,]] ~~but not limited to leukocye~~.

3. (currently amended): The method of claim 1, wherein the target gene is a human leukocyte antigen (HLA). ~~This method also can be used for the genetic typing of other genes.~~

4. (currently amended): The method of claim 1, wherein the suitable sample is [[is]] selected from the group consisting of blood, saliva, hair, a human tissue that comprises a ~~huamn~~ human nucleic acid, and any other human tissues containing nuclear cells.

5-6. (canceled)

7. (original): The method of claim 1, wherein the target cell is isolated from the suitable sample using a magnetic microbead.

8. (canceled)

9. (original): The method of claim 1, wherein the preparation of the target nucleotide sequence comprises a nucleic acid amplification step.

10-21. (canceled)

22. (original): The method of claim 1, wherein the target nucleotide sequence obtained in step a) is single-stranded DNA or RNA.

23. (canceled)

24. (original): The method of claim 1, wherein a labeled target nucleotide sequence is obtained in step a).

25. (canceled)

26. (original): The method of claim 1, wherein the another nucleotide sequence is complementary to the positive control probe, the negative control probe or the hybridization control probe comprised on the chip.

27. (canceled)

28. (original): The method of claim 1, wherein the probes comprised on the chip are modified.

29. (canceled)

30. (original): The method of claim 1, wherein the chip comprises 1-400 different types of probes.

31. (original): The method of claim 1, wherein the chip comprises multiple arrays of probes and each array comprises 1-400 different types of probes.

32-36. (canceled)

37. (currently amended): The method of claim 1, wherein multiple copies of a probe [[is]] are immobilized on the chip.

38-40. (canceled)

41. (original): The method of claim 1, wherein the positive control probe is complementary to a portion of the target nucleotide sequence, a nucleotide sequence amplified synchronically with the target nucleotide sequence or a synthetic nucleotide sequence.

42. (original): The method of claim 41, wherein the negative control probe has about 1-3 basepair mismatches when compared to the positive control probe.

43. (original): The method of claim 1, wherein the hybridization control probe is complementary to a synthetic nucleotide sequence not related to the target gene.

44-45. (canceled)

46. (original): The method of claim 1, wherein one end of the immobilization control probe is chemically modified and the other end of the immobilization control probe has a detectable label.

47. (original): The method of claim 1, wherein the chip comprises a positive control probe, a negative control probe, a hybridization control probe and an immobilization control probe.

48. (canceled)

49. (original): The method of claim 1, wherein the hybridization reaction in step c) is conducted in a hybridization solution comprising sodium chloride/sodium citrate (SSC) and a

surfactant.

50-52. (canceled)

53. (original): The method of claim 1, wherein the hybridization reaction in step c) is conducted at a temperature ranging from about 42°C to about 70°C.

54-56. (canceled)

57. (original): The method of claim 1, wherein the immobilization efficiency is assessed by analyzing a signal from the immobilization control probe.

58. (original): The method of claim 1, wherein the overall hybridization efficiency is assessed by analyzing the hybridization between the hybridization control probe and a labeled synthetic nucleotide sequence not related to the target gene.

59. (original): The method of claim 1, wherein the hybridization specificity is assessed by analyzing the ratio between the hybridization signal involving the positive control probe and the hybridization signal involving the negative control probe, and the ratio between the hybridization signal involving the positive hybridization control probe and the hybridization signal involving the negative hybridization control probe, and increased ratios indicating the increased hybridization specificity.

60. (currently amended): The method of claim 1, wherein, in hybridizations involving a group of closely related probes, a positive signal(s) is determined based on the ~~follwing~~ following criteria:

a) the ratio of the hybridization signal over ~~backbround~~ background noise is more than 3;

b) the ratio of the hybridization signal over a ~~relavent~~ relevant positive control probe hybridization signal is within a ~~pretermined~~ predetermined range;

c) ~~compairing~~ comparing hybridization signals of all probes giving positive signals based on the steps of a) and b), or hybridization signals of two probes giving two strongest hybridization signals when only one probe giving positive signal based on the steps of a) and b), to determine whether the signal is positive or negative; and

d) there are 2 or less than 2 positive signals involving the group of closely related probes.

61. (original): The method of claim 1, wherein the oligonucleotide probe is complementary to a target HLA gene.

62-64. (canceled)

65. (original): An oligonucleotide probe for typing a HLA target gene comprising a nucleotide sequence that:

a) hybridizes, under high stringency, with a target HLA nucleotide sequence, or a complementary strand thereof, that is set forth in Table 1; or

b) has at least 90% identity to a target HLA nucleotide sequence comprising a nucleotide sequence, or a complementary strand thereof, that is set forth in Table 1.

66. (original): The probe of claim 65, which comprises DNA, RNA, PNA or a derivative thereof.

67. (original): The probe of claim 65, which comprises a nucleotide sequence, or a complementary strand thereof, that is set forth in Table 1.

68. (original): The probe of claim 65, which is labeled.

69. (original): The probe of claim 68, wherein the label is selected from the group consisting of a chemical, an enzymatic, an immunogenic, a radioactive, a fluorescent, a luminescent and a FRET label.

70. (original): An array of oligonucleotide probes immobilized on a support for typing a HLA target gene, which array comprises a support suitable for use in nucleic acid hybridization having immobilized thereon a plurality of oligonucleotide probes, at least one of said probes comprising a nucleotide sequence that:

a) hybridizes, under high stringency, with a target HLA nucleotide sequence, or a complementary strand thereof, that is set forth in Table 1; or

b) has at least 90% identity to a target HLA nucleotide sequence comprising a nucleotide sequence, or a complementary strand thereof, that is set forth in Table 1.

71. (original): The array of claim 70, wherein the plurality of probes comprise DNA, RNA, PNA or a derivative thereof.

72. (original): The array of claim 70, wherein at least one of the probes comprises a nucleotide sequence, or a complementary strand thereof, that is set forth in Table 1.

73. (original): The array of claim 70, which comprises all of the probes comprising the nucleotide sequences, or a complementary strand thereof, that are set forth in Table 1.

74. (original): The array of claim 73, wherein at least one of the probes is labeled.

75. (original): The array of claim 74, wherein the label is selected from the group consisting of a chemical, an enzymatic, an immunogenic, a radioactive, a fluorescent, a luminescent and a FRET label.

76. (original): The array of claim 70, wherein the support comprises a surface that is selected from the group consisting of a silicon, a plastic, a glass, a ceramic, a rubber, and a polymer surface.